**Chapter 3**

Dart is a modern, object-oriented programming language developed by Google, designed for building fast and scalable applications across multiple platforms. It is the core language used in Flutter, Google's framework for creating mobile, web, and desktop applications from a single codebase. Dart combines strong static typing with flexibility, supporting both type inference and robust null safety features to prevent runtime errors. Its syntax is clean and familiar to developers with experience in Java, JavaScript, or C#. Dart excels in asynchronous programming with its Future and async/await constructs, making it ideal for tasks like fetching data or managing user interactions. It also supports advanced features like mixins for code sharing, collections for efficient data handling, and seamless integration with native code. With its ability to compile to both native machine code and JavaScript, Dart ensures high performance and versatility, making it a powerful tool for modern, cross-platform development.